CLAIMS

Sub RS

1. Method of communicating digital information over at least one communication medium (100, 401, 402) shared between several communication means (101 to 106), all said media using the same communication protocol and being physically identical, characterised in that it includes:

- a first operation of transmitting, by a first communication means, said information to be transmitted, having a first format , on a first medium.

- an operation of receiving transmitted information having the first format, by a second communication means,

- an operation of reformatting the received information having the first format, in order to give it a second format different from the first format, effected by the second communication means, and

- a second operation of transmitting, by said second communication means, said information having the second format, on a second medium.

2. Communication method according to Claim 1, characterised in that, following any initialisation operation, said reformatting operation is effected on any information having said first format .

3. Communication method according to either one of Claims 1 or 2, characterised in that it includes an operation (903) of determining the need to reformat received digital information having the first format and, when reformatting is necessary, said reformatting operation and said transmission operation are performed on said received digital information.

4. Communication method according to Claim 3, characterised in that said necessity determination operation (903) takes into account any destination address of said received data.

5. Communication method according to ~~either one of~~ Claims 3 or 4, characterised in that said necessity determination operation (903) takes into account a transmission channel identifier used during the first transmission operation.

6. Communication method according to ~~any one of~~ Claims 3 to 5, characterised in that said necessity determination operation (903) takes into account the bandwidth to be used during the second transmission operation.

7. Communication method according to ~~any one of~~ Claims 3 to 6, characterised in that, the second communication means being adapted to reformat at least two received information formats, said necessity determination operation (903) takes into account the first format of the received information.

8. Communication method according to ~~any one of~~ Claims 2 to 7, characterised in that it includes an operation of stopping reformatting (911) and in that, following said stoppage operation, the reformatting operation is no longer performed on the received data having the first format.

9. Communication method according to ~~to any one of~~ Claims 2 to 8, characterised in that, after any information reception operation, it includes an operation of detecting the first format (903) and, when the first format is detected, said reformatting operation is performed on any information having the first format.

10. Communication method according to ~~any one of~~ Claims 2 to 9, characterised in that the first communication medium and the second communication medium are merged.

11. Communication method according to ~~any one of~~ Claims 2 to 9, characterised in that the first communication medium and the second communication medium are not merged.

12. Communication method according to ~~any one of~~ Claims 3 to ~~11~~, characterised in that it includes an operation of isolating flows between two buses.

13. Communication method according to ~~any one of~~ Claims 2 to ~~12~~, characterised in that one of the transmission operations is performed in isochronous and the other in asynchronous mode.

14. Communication method according to ~~any one of~~ Claims 2 to 13, characterised in that it includes a transmission resource allocation

operation (904) for at least one transmission operation on the communication medium concerned.

15. Communication method according to Claim 14, characterised in that it includes a bandwidth reservation operation (904) for at least one transmission operation.

16. Communication method according to ~~any one~~ of Claims 1 to ~~15~~, characterised in that, during at least one transmission operation, it is determined whether, at the moment of sending, there is sufficient resource and, in the affirmative, sending is effected and, if not, it is considered that the information to be transmitted is lost.

17. Device for communicating digital information over at least one communication medium (100, 401, 402) shared between several communication means (101 to 106), all said media using the same communication protocol and being physically identical, characterised in that it has a communication means (107, 108, 409, 509) which:

- has a means of receiving information (309) transmitted over a first medium by a first communication means and having the first format,

- is adapted to reformat the received information having the first format, in order to give it a second format different from the first format, and

- is adapted to transmit said information having the second format, over a second medium.

18. Communication device according to Claim 17, characterised in that the communication means is adapted, following any initialisation, to reformat any information having said first format and to transmit the reformatted information having the corresponding second format.

19. Communication device according to either one of Claims 17 or 18, characterised in that it has a means of determining the necessity of reformatting received digital information having the first format and, when said determination means determines that reformatting is necessary, the communication means is adapted to perform the reformatting of said digital information.

20. Communication device according to Claim 19, characterised in that the necessity determination means is adapted to take into account any destination address of said received data in order to determine said necessity.

21. Communication device according to either one of Claims 19 or 20, characterised in that the necessity determination means is adapted to take into account a transmission channel identifier used during the first transmission operation, in order to determine said necessity.

22. Communication device according to any one of Claims 19 to 21, characterised in that the necessity determination means is adapted to take into account the bandwidth to be used during the second transmission operation, in order to determine said necessity.

23. Communication device according to any one of Claims 19 to 22, characterised in that the second communication means is adapted to reformat at least two received information formats, and in that the necessity determination means takes into account the first format of the received information, in order to determine said necessity.

24. Communication device according to any one of Claims 17 to 23, characterised in that it includes a reformatting stoppage means and in that, following the functioning of the stoppage means, the communication means transmits no further information having the second format.

25. Communication device according to any one of Claims 17 to 24, characterised in that it has a means of detecting the first format adapted, on reception of information, to determine whether said information has the first format and, in the affirmative, the communication means is adapted to reformat any information having the first format.

26. Communication device according to any one of Claims 17 to 25, characterised in that each communication medium is in accordance with standard IEEE 1394.

27. Communication device according to any one of Claims 17 to 26, characterised in that the first communication medium and the second communication medium are merged.

28. Communication device according to ~~any one of~~ Claims 18 to 26, characterised in that the first communication medium and the second communication medium are not merged.

29. Communication device according to Claim 28, characterised in that it has an interbus bridge complying, for example, with the standard 1394.1.

30. Communication device according to ~~either one of~~ Claims 28 or 29, characterised in that the communication means is adapted to isolate the flows between the two communication media and to cause peripherals connected to these communication media to communicate.

31. Communication device according to ~~any one of~~ Claims 18 to 30, characterised in that the communication means is adapted to perform operations of transmission and/or reception in isochronous mode on the one hand and asynchronous mode on the other hand.

32. Communication device according to ~~any one of~~ Claims 18 to 31, characterised in that it has a transmission resources allocation means adapted to allocate transmission resources for at least one transmission operation over the communication medium concerned.

33. Communication device according to Claim 32, characterised in that it has a bandwidth reservation means for at least one information transmission.

34. Communication device according to ~~any one of~~ Claims 18 to 33, characterised in that the communication means is adapted to determine whether, at the time of sending, there is sufficient resource and, in the affirmative, sending is carried out and, if not, to consider that the information to be transmitted is lost.

35. Communication device according to ~~any one of~~ Claims 18 to 34, characterised in that the communication means is adapted to process, in parallel, several information flows.

36. Communication device according to ~~any one of~~ Claims 18 to 35, characterised in that the communication means is adapted to process flows bidirectionally.

37. Communication device according to any one of Claims 17 to 36, characterised in that the communication means is adapted so that one of the formats complies with the "DIGITAL VIDEO" standard.

38. Communication device according to ~~any one of~~ Claims 18 to 37, characterised in that the communication means is adapted so that one of the formats complies with the standard "JPEG 2000".

39. Communication device according to ~~any one of~~ Claims 18 to 38, characterised in that the communication means is adapted so that one of the formats complies with the standard "MPEG2".

40. Network, characterised in that it has a communication device according to ~~any one of~~ Claims 18 to 39.

41. Computer, characterised in that it has a communication device according to ~~any one of~~ Claims 18 to 39.

42. Camera, characterised in that it has a communication device according to ~~any one of~~ Claims 18 to 39.

43. Facsimile machine, characterised in that it has a communication device according to ~~any one of~~ Claims 18 to 39.

44. Copier, characterised in that it has a communication device according to ~~any one of~~ Claims 18 to 39.

45. Printer, characterised in that it has a communication device according to ~~any one of~~ Claims 18 to 39.

46. Camcorder, characterised in that it has a communication device according to ~~any one of~~ Claims 18 to 39.

47. Video recorder, characterised in that it has a communication device according to ~~any one of~~ Claims 18 to 39.

48. Display means, characterised in that it has a communication device according to ~~any one of~~ Claims 18 to 39.

49. Modem, characterised in that it has a communication device according to ~~any one of~~ Claims 18 to 39.

50. Television receiver, characterised in that it has a communication device according to any one of Claims 17 to 39.

51. Mass memory, characterised in that it has a communication device according to ~~any one of~~ Claims 1~~8 to 39~~.

52. Scanner, characterised in that it has a communication device according to ~~any one of~~ Claims 1~~8 to 39~~.

53. Photographic apparatus, characterised in that it has a communication device according to ~~any one of~~ Claims 1~~8 to 39~~.

54. Information storage means which can be read by a computer or microprocessor storing instructions of a computer program, characterized in that it allows implementation of the communication method according to any one of claims 1 and 2 ~~to 16~~.

55. Information storage means which is removable, partially or completely, and can be read by a computer or microprocessor storing instructions of a computer program, characterized in that it allows implementation of the communication method according to any one of claims 1 and 2 ~~to 16~~.

56. Information storage means which can be read by a computer or microprocessor storing information, characterized in that said information are issued from the implementation of the communication method according to any one of claims 1 and 2 ~~to 16~~.